

CLAIMS:

We Claim:

1. A vehicle including a door and an infinite door check mechanism for enabling the door to be moved from a closed position in a door frame to any one of a plurality of different open positions, the vehicle further comprising:

a motor coupled to the door and arranged to move the door from the closed position to any of the open positions;

detecting means for detecting resistance to opening movement of the door; and

a processor coupled to said detecting means and said motor for receiving the detected resistance to the opening movement of the door and directing said motor to stop the opening movement of the door when the detected resistance is above a threshold.

2. The vehicle of claim 1, wherein said detecting means are arranged in connection with said motor.

3. The vehicle of claim 2, wherein said detecting means are arranged to detect torque on said motor.

4. The vehicle of claim 1, wherein said detecting means comprise a pressure sensor arranged on the door and having a pressure sensitive surface oriented in the direction of opening of the door.

5. A method for enabling a door to be opened to any one of a plurality of different positions, comprising the steps of:

coupling a motor to the door;

actuating the motor to move the door from a closed position into an open position;

detecting resistance to opening movement of the door;

upon detecting resistance to the opening movement of the door, analyzing the detected resistance comparing it to a threshold; and

when the detected resistance is above a threshold, directing the motor to stop the opening movement of the door.

6. The method of claim 5, wherein the step of detecting the resistance to opening movement of the door comprises the step of arranging a sensor in connection with the motor.

7. The method of claim 6, wherein the sensor is arranged to measure torque on the motor.

8. The method of claim 5, wherein the step of detecting the resistance to opening movement of the door comprises the steps of arranging a pressure sensor on the door and providing the pressure sensor with a pressure sensitive surface oriented in the direction of opening of the door.

9. A method for controlling a motorized door of a vehicle to allow for non-motorized operation, comprising the steps of:

monitoring the torque on the motor or force or torque exerted on the door; and
disengaging the motor from the door when the torque or force is above a threshold.

10. The method of claim 9, further comprising the steps of:
monitoring the velocity of the door; and
re-engaging the motor with the door when the velocity of the door is zero.

11. The method of claim 9, wherein the torque on the motor is monitored.

12. The method of claim 9, wherein the torque exerted on the door is monitored.

13. The method of claim 9, wherein the force exerted on the door is monitored.

14. An apparatus for controlling a motorized door of a vehicle to allow for non-motorized operation, comprising:

a motor releasably coupled to the door for opening and closing the door;
a torque sensor for measuring the torque on the motor, torque or force on the door; and
a processor coupled to said torque sensor and said motor for analyzing the measured torque or force on the motor or door relative to a threshold and disengaging said motor from the door when the torque or force is above the threshold.

15. The apparatus of claim 14, wherein said torque sensor is arranged to measure the torque on the motor.

16. The apparatus of claim 14, wherein said torque sensor is arranged to measure the torque on the door.

17. The apparatus of claim 14, wherein said torque sensor is arranged to measure the force on the door.

18. A method for controlling opening and closing of a vehicle door; comprising the steps of:
detecting the presence of an individual authorized to open the door and enter the vehicle;
generating a signal upon the detection of the presence of an authorized individual or an object possessed by the authorized individual;
actuating a motor upon receipt of the signal to open or close the door.

19. An apparatus for controlling opening and closing of a vehicle door; comprising:
a sensor for detecting the presence of an individual authorized to open the door and enter the vehicle, said sensor being arranged to generate a signal upon the detection of the presence of an authorized individual or an object possessed by the authorized individual; and
a motor coupled to said sensor and the door and arranged to open or close the door upon receipt of the signal from said sensor.